SERVICE MANUAL

PWER AMPLIFIER

SANYO

JA 250

(EUROPE)

This is a service manual for model JA250 and only items changed from model JA300 are indicated. For other items, refer to Service Manual for model JA300 (WM-8507).
mark represents a non-interchangeable part.

Ref. No.	JA 300	JA 250	Description	Remark
	(PACKING & ACCESSORY)			
	141-6-133T-38802	141-6-133T-46100	Individual Carton	#
	141-6-410T-81802	141-6-410T-93100	Instruction Manual	#
	(CABINET)			
1	141-0-122T-46500	141-0-122T-46501	Front Panel Assy	#
3	141-2-163T-91900	141-2-163T-91930	Rotary Knob, Function	#
4	141-2-163T-81730	141-2-163T-81740	Rotary Knob, Volume	#
6	141-2-160T-09700	141-2-160T-09701	Push Button	#
7	141-2-160T-16500	141-2-160T-16501	Push Button, Power SW	#
	(CHASSIS)			
13	141-2-126T-41302	141-2-126T-41307	Back Lid	#
25	141-2-453T-01701	(Not used)	Washer 3 x 10 x 1mm	
	(Add)	141-2-421T-43900	Special Screw	

Add this sheet to Model JA300 Service Manual.

SANYO ELECTRIC TRADING CO., LTD.
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Apr./'83/2000 KA Printed in Japan

SERVICE MANUAL

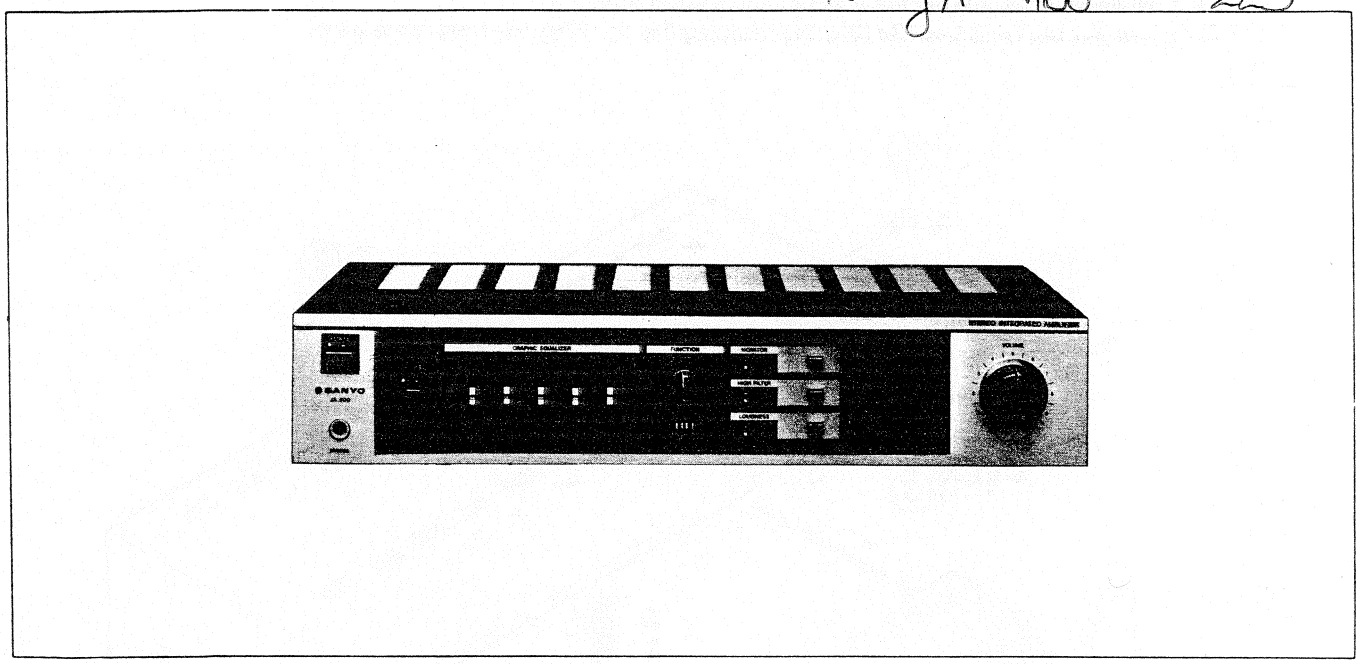
POWER AMPLIFIER

SANYO

JA 300

(EUROPE)

≈ JA 400 223



SPECIFICATIONS

NOTE:

The below mentioned specifications are mainly based on the IHF measurements standard. They can therefore not directly be compared with specifications based on the DIN standard or ther standards.

Continous output power	25W x 2 (at 8 ohms, 0.3% distortion)
Total harmonic distortion	0.1% (20 W output, 8 ohms)
Input sensitivity and impedance	
PHONO	2.5 mV/47 kohms
AUX/TUNER/TAPE PLAY	150 mV/47 kohms
Phono overload level	130 mV RMS (at 1kHz)
Output level	
TAPE. REC	150mV
Frequency response	20 – 20000 Hz
Graphic equalizer controls	±10 dB (63/250/1000/ 4000/16000 Hz)
High filter response	7 kHz (–6 dB/oct.)
Loudness control response	
100 Hz/10 kHz	+8 dB/+4 dB
Signal to noise ratio	90 dB
Power requirements	AC: 220V, 50Hz
Power consumption	130 W
AC output socket	AC: 18 V, 300 mA
Dimensions (Approx.)	420 (W) x 220 (D) x 85 (H) mm (16-1/2" x 8-5/8" x3-3/8")
Weight (Approx.)	4 kg (9 lbs.)

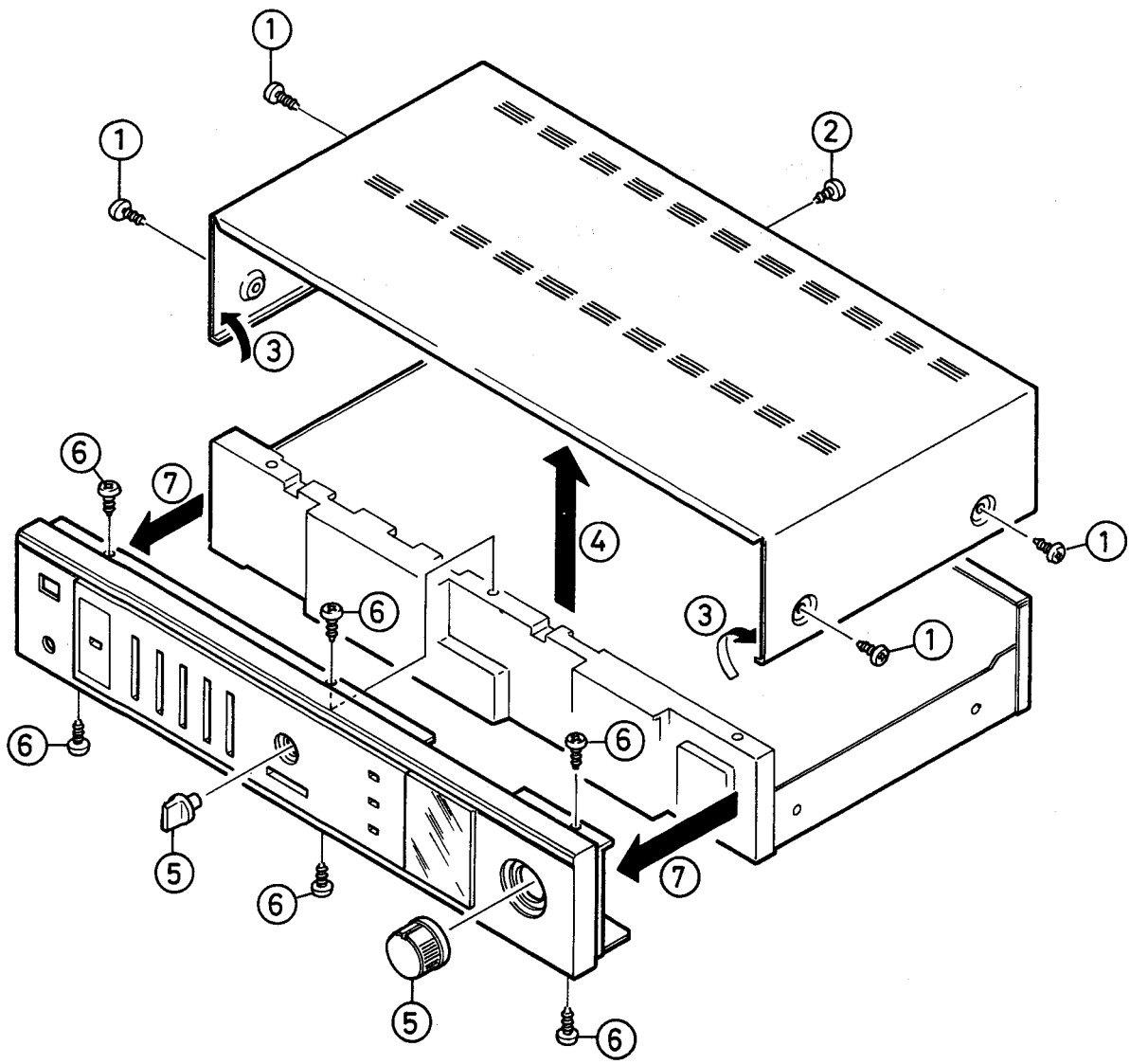
* Specifications subject to change without notice.

DISMOUNTING OF CABINET AND FRONT PANEL

- Perform disassembly of amplifier after removing the power supply cord with out fail.
- Revove parts in order of disassembly as numdered.

1. **TO DISMOUNT CABINET**
   (1). Take out total 4 screws (Binding head tapping 4 x 8mm 1) from cabinet.
   (2). Take out 1 screw (Binding head tapping 3 x 6mm 2) from cabinet.

2. **TO DISMOUNT FRONT – PANEL**
   (1). Remove volume control knob and function select knob.
   (2). Take out total 6 screws (Binding head tapping 3 x 12mm 6) from front panel.

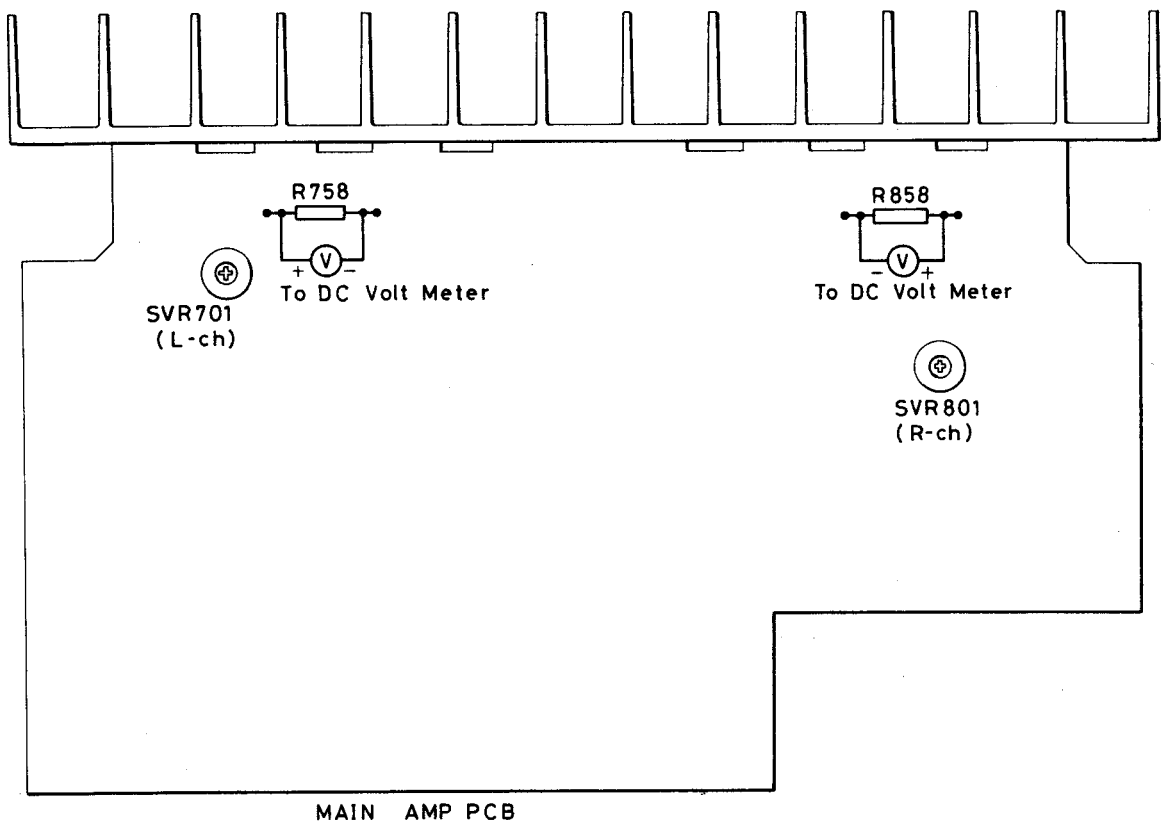


ADJUSTMENT OF BIAS

* **CONDITIONS**

VOLUME KNOB	:	"0" (Minimum)
GRAPHIC EQUALIZER KNOB	:	"0" (Center)
BALANCE KNOB	:	"0" (Center)
FUNCTION KNOB	:	"aux"
MONITOR BUTTON	:	"source"
HI – FILTER BUTTON	:	"off"
LOUDNESS BUTTON	:	"off"
SPEAKER BUTTON	:	"on"

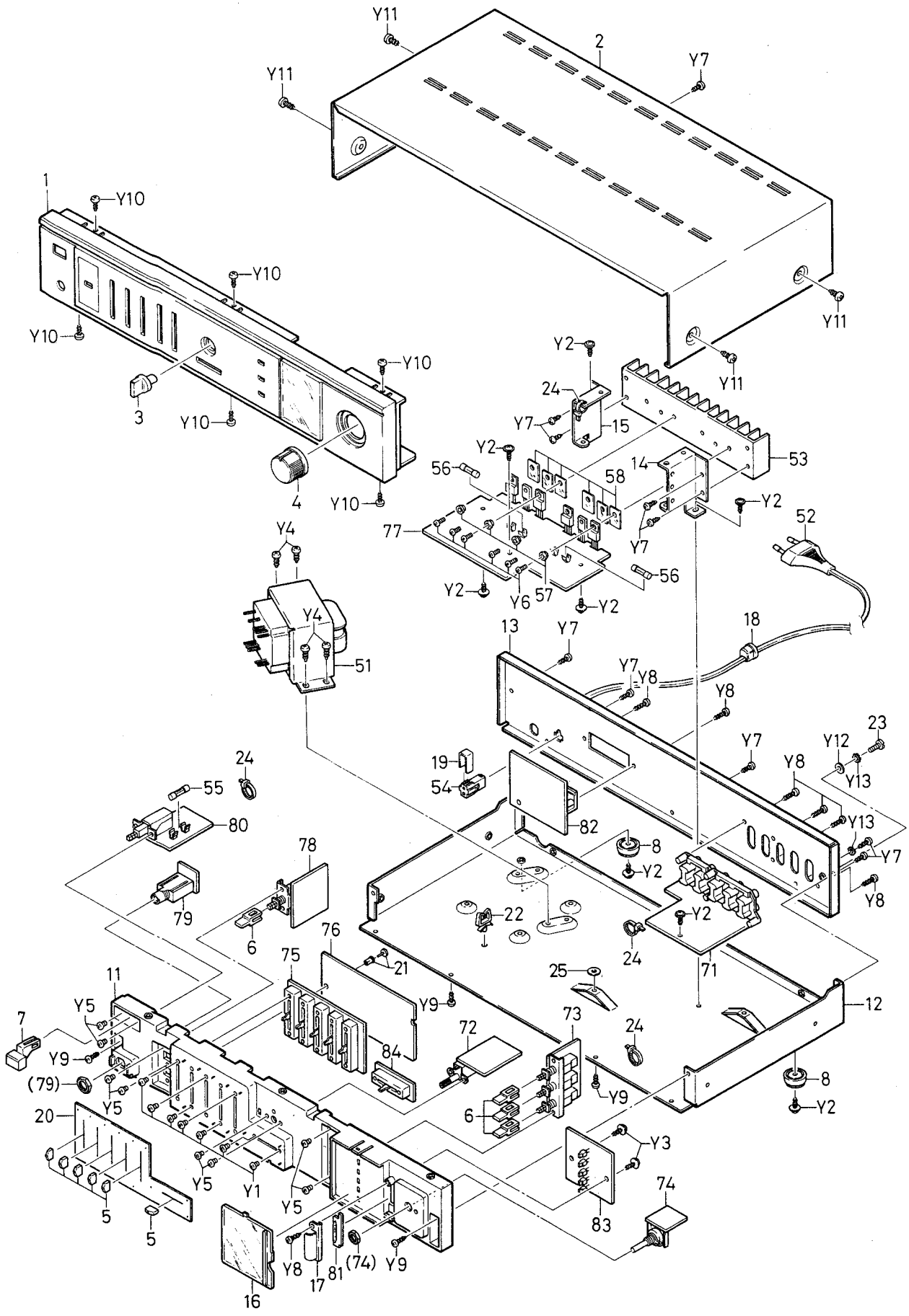
Note : No-Input ● No-Load



After the power switch is turned on, adjust SVR701 and SVR801 respectively as follows.

L – Channel : SVR701 for 3mV±0.5mV reading beteen the both leads of R758.
R – Channel : SVR801 for 3mV±0.5mV reading beteen the both leads of R858.

EXPLODED VIEW



PARTS LIST

Ref. No.	Part No.	Description	Q'ty
PACKING & ACCESSORY			
	141-6-133T-38802	Individual Carton	1
	141-6-144T-85000	Foam Plastic Case	2
	141-6-331T-11600	Protector Sheet	1
	141-6-231T-35600	Inner Polye Cover	1
	141-6-410T-81802	Instruction Manual	1
	141-6-415T-32300	Notic, FTZ	1
CABINET			
1	141-0-122T-46500	Front Panel Ass'y	1
2	141-0-111T-54901	Cabinet Ass'y	1
3	141-2-163T-91900	Rotary Knob	1
4	141-2-163T-81730	Rotary Knob	1
5	141-2-164T-30700	Slide Knob	6
6	141-2-160T-09700	Push Button	4
7	141-2-160T-16500	Push Button, Power SW	1
8	141-2-174T-11200	Stand	2
CHASSIS			
11	141-2-311T-43800	Chassis	1
12	141-2-125T-29600	Bottom Lid	1
13	141-2-126T-41302	Back Lid	1
14	141-2-310T-68400	Bracket, Heat Sink, Right	1
15	141-2-310T-68500	Bracket, Heat Sink, Left	1
16	141-2-143T-92601	Marking Plate	1
17	141-2-329T-08700	Reflector	1
18	141-2-464T-14400	Fixer, AC Cord	1
19	141-2-310T-69700	Bracket	1
20	141-2-135T-86702	Cover	1
21	141-2-464T-40500	Fixer	1
22	141-2-464T-29900	Fixer	1
23	141-2-421T-28800	Special Screw	1
24	141-2-464T-20600	Fixer	5
25	141-2-453T-01701	Washer 3 x 10 x 1mm	1
FIXING PARTS			
Y 1		Pan Hd. Screw 2 x 4mm	7
Y 2		Pan. Hd. Tapping Screw W/Washer 3 x 6mm	8
Y 3		Pan. Hd. Tapping Screw W/Washer 3 x 8mm	2
Y 4		Pan. Hd. Tapping Screw W/Washer 4 x 8mm	4
Y 5		Binding Hd. Screw 3 x 6mm	8
Y 6		Binding Hd. Screw 3 x 8mm	6
Y 7		Binding Hd. Tapping Screw 3 x 6mm	10
Y 8		Binding Hd. Tapping Screw 3 x 8mm	9
Y 9		Binding Hd. Tapping Screw 3 x 10mm	4
Y10		Binding Hd. Tapping Screw 3 x 12mm	6
Y11		Binding Hd. Tapping Screw 4 x 8mm	4
Y12		Spring Washer 3 x 10 x 1t	1
Y13		External Tooth Lock Washer 3 x 6.5t x 0.45t	2
ELECTRICAL PARTS			
51	4-300T-60600	Power Transformer	1
52	4-243T-84971	Power Cord	1
53	141-2-368T-26100	Heat Sink	1
54	4-240T-16571	Socket, TUNER AC	1
55	4-234T-10583	Fuse, T800mA 250V (F901)	1
56	4-234T-10588	Fuse, T2.0A 250V (F701,801)	2
57	141-2-243T-09800	Base	4
58	141-2-327T-26100	Insulator	6

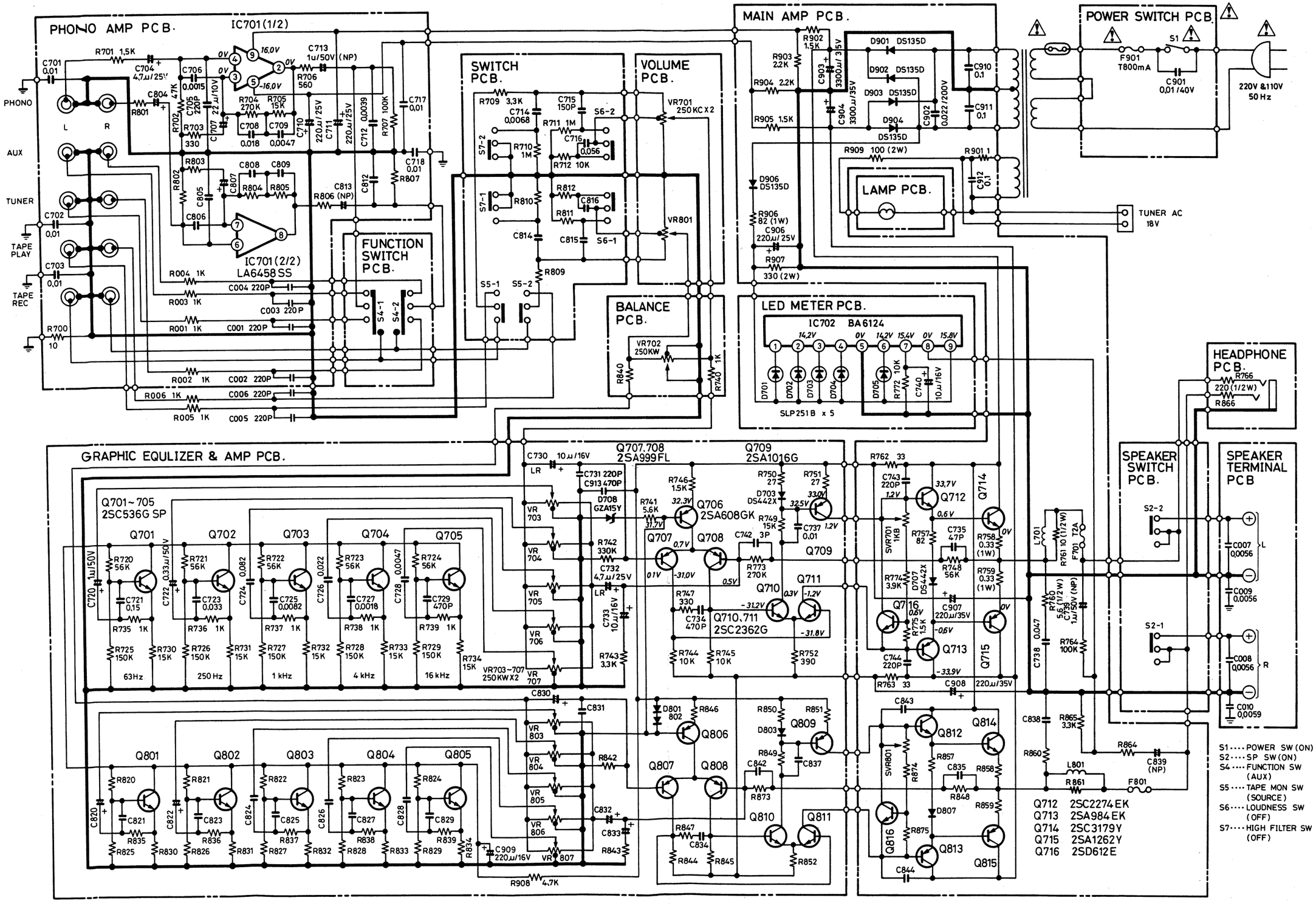
Ref. No.	Part No.	Description	Q'ty
PHONO AMP C. C. B. ASS'Y			
71	141-4-250T-61671	P.C.B. Ass'y, Phono Amp	1
	4-240T-06900	Socket, 4p RCA	1
	4-240T-07000	Socket, 6p RCA	1
IC701		IC LA6458SS	1
CAPACITORS			
C704,804		Electrolytic 4.7μF 25V	2
C713,813		Electrolytic 1μF (Nonpolar) 50V	2
C710,711		Electrolytic 220μF 25V	2
C707,807		Electrolytic 22μF 10V	2
C708,808		Mylar 0.018μF ±5% 50V	2
C709,809		Mylar 0.0047μF ±5% 50V	2
C712,812		Mylar 0.0039μF ±10% 50V	2
C706,806		Mylar 0.0015μF ±10% 50V	2
C705,805		Ceramic 220pF ±10% 50V	2
C702,703, 701		Ceramic 0.01μF +80–20% 50V	3
C717,718		Ceramic 0.01μF ±10% 50V	2
C001,002, 003,004, 005,006		Ceramic 220pF ±10% 50V	6
RESISTORS		All Resistors are Carbon T-type ±5% ¼W, unless otherwise noted.	
R703,803		330 ohm	2
R706,806		560 ohm	2
R701,801		1.5K ohm	2
R705,805		15K ohm	2
R702,802		47K ohm	2
R707,807		100K ohm	2
R704,804		270K ohm	2
R700		10 ohm	1
R001,002, 003,004, 005,006		1K ohm	6
FUNCTION SWITCH P. C. B. ASS'Y			
72	141-4-250T-61771	P.C.B. Ass'y, Function Switch	1
S4	4-238T-56000	Rotary Switch	1
SWITCH P. C. B. ASS'Y			
73	141-4-250T-61871	P.C.B. Ass'y, Switch	1
S5,6,7	4-238T-56100	Push Switch	1
CAPACITORS			
C716,816		Mylar 0.056μF ±10% 50V	2
C714,814		Mylar 0.0068μF ±10% 50V	2
C715,815		Ceramic 150pF ±10% 50V	2
RESISTORS			
R710,711, 810,811		1M ohm	4
R712,812		10K ohm	2
R709,809		3.3K ohm	2
VOLUME P. C. B. ASS'Y			
74	141-4-250T-61971	P.C.B. Ass'y, Volume	1
VR701,801	4-220T-03400	Variable Resistors	1
GRAPHIC EQUALIZER CONTROL P. C. B. ASS'Y			
75	141-4-250T-62071	P.C.B. Ass'y, Graphic Equalizer Control	1
VR703,704, 705,706,707	4-220T-03500	Variable Resistor	5
CAPACITORS			
C720,820		Electrolytic 1μF 50V	2
C722,822		Electrolytic 0.33μF 50V	2
C724,824		Mylar 0.082μF ±10% 50V	2
C726,826		Mylar 0.022μF ±10% 50V	2
C728,828		Mylar 0.0047μF ±10% 50V	2

PARTS LIST

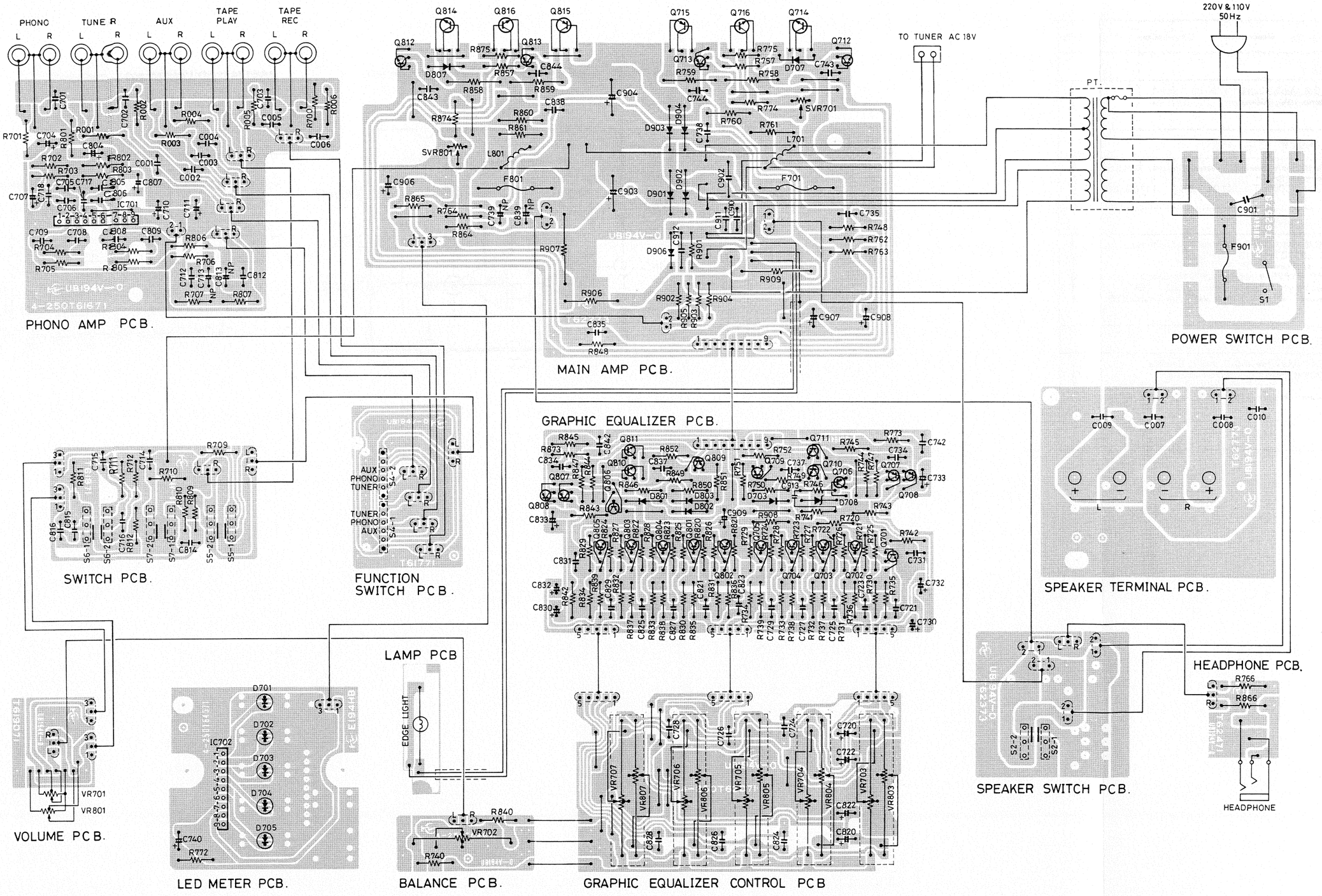
Ref. No.	Part No.	Description	Q'ty
GRAPHIC EQUALIZER AMP P. C. B. ASS'Y			
76	141-4-250T-62102	P.C.B. Ass'y, Graphic Equalizer Amp P. C. B.	1
Q709,809		Transistor 2SA1016	2
Q710,711, 810,811		Transistor 2SC2362	4
Q706,806		Transistor 2SA608K	2
Q701,702, 703,704, 705		Transistor 2SC536 AUD SP	5
Q801,802, 803,804, 805		Transistor 2SC536 AUD SP	5
Q707,708, 807,808		Transistor 2SA999 NF	4
D703,801, 802,803		Diode DS442X	4
D708		Zener Diode GZA15Y	1
CAPACITORS			
C909		Electrolytic 220μF 16V	1
C733,833		Electrolytic 10μF 16V	2
C730,830		Electrolytic 10μF 16V	2
C732,832		Electrolytic 4.7μF 25V	2
C721,821		Mylar 0.15μF ±10% 50V	2
C723,823		Mylar 0.33μF ±10% 50V	2
C725,825		Mylar 0.0082μF ±10% 50V	2
C727,827		Mylar 0.0018μF ±10% 50V	2
C729,829		Mylar 470pF ±10% 50V	2
C734,834		Mylar 470pF ±10% 50V	2
C737,837		Mylar 0.01μF ±10% 50V	2
C731,831		Ceramic 220pF ±10% 50V	2
C742,842		Ceramic 3pF ±10% 50V	2
C913		Mylar 470pF ±10% 50V	1
RESISTORS		All Resistors are Carbon T-type ±5% ¼W, unless otherwise noted.	
R752,852		FP-Carbon 390 ohm P-type	2
R908		FP-Carbon 4.7K ohm P-type	1
R749,849		15K ohm	2
R742,842		330K ohm	2
R725,726, 727,728, 729		150K ohm	5
R825,826, 827,828 829		150K ohm	5
R720,721, 722,723, 724		56K ohm	5
R820,821, 822,823, 824		56K ohm	5
R730,731, 732,733, 734		15K ohm	5
R830,831, 832,833, 834		15K ohm	5
R744,745, 844,845		10K ohm	4
R735,736, 737,738, 739		1K ohm	5
R835,836, 837,838, 839		1K ohm	5
R746,846		1.5K ohm	2
R747,847		330 ohm	2
R750,751, 850,851		27 ohm	4
R733,873		270K ohm	2
R743,843		3.3K ohm	2
R741,		5.6K ohm	1

Ref. No.	Part No.	Description	Q'ty
MAIN AMP P. C. B. ASS'Y			
77	141-4-250T-62273	P.C.B. Ass'y, Main Amp PCB	1
	4-240T-11276	Socket, 9p	1
	141-2-381T-04200	Bracket Fuse	4
SVR701,801	4-222T-73573	Semi-Variable Resistor 1K ohm	2
L701,801	4-265T-07930	VHF Coil	2
	4-240T-11200	Socket, 3p	1
Q714,814		Transistor 2SC3179	2
Q715,815		Transistor 2SA1262	2
Q712,812		Transistor 2SC2274K	2
Q713,813		Transistor 2SA984K	2
Q716,816		Transistor 2SD612	2
D707,807		Diode DS442 X	2
D901,902 903,904		Diode DS135 D	4
D906		Diode DS135D	1
CAPACITORS			
C903,904	4-163T-10100	Electrolytic 3300μF 35V	2
C907,908		Electrolytic 220μF 35V	2
C906		Electrolytic 220μF 25V	1
C739,839		Electrolytic 1μF (Nonpolar) 50V	2
C902	4-223T-13771	Capacitor 0.022μF ±20% 200V	1
C738,838		Mylar 0.047μF ±10% 50V	2
C910,911		Mylar 0.1μF ±20% 100V	2
C912		Ceramic 0.1μF ±10% 50V	1
C735,835		Ceramic 47pF ±10% 50V	2
C743,744, 843,844		Ceramic 220pF ±10% 50V	4
C903		Ceramic 0.1μF +80–20% 50V	1
RESISTORS		All Resistors are Carbon T-type ±5%, ¼W unless otherwise noted.	
R758,759, 858,859		Metal 0.33 ohm P-type 1W	4
R760,860		FP-Carbon 5.6 ohm P-type ½W	2
R901		FP-Carbon 1 ohm P-type	1
R757,857		FP-Carbon 82 ohm P-type	2
R762,763		FP-Carbon 33 ohm P-type	2
R906		Metal 82 ohm P-type 1W	1
R909		Metal 100 ohm P-type 2W	1
R748,848		56K ohm	2
R764,864		100K ohm	2
R903,904		2.2K ohm	2
R775,875		1.5K ohm	2
R774,874		3.9K ohm	2
R865		3.3K ohm	1
R907		Metal 330 ohm P-type 2W	1
R902,905		FP-Carbon 1.5K ohm P-type	2
R761,861		FP-Carbon 10 ohm P-type ½W	2
SPEAKER SWITCH P. C. B. ASS'Y			
78	141-4-250T-62373	P.C.B. Ass'y, Speaker Switch	1
S2	4-238T-49700	Switch	1
HEADPHONE P. C. B. ASS'Y			
79	141-4-250T-62402	P.C.B. Ass'y, Headphone	1
	4-240T-29971	Socket	1
R766,866		FP-Carbon 270 ohm P-type ½W	2
AC POWER SWITCH P. C. B. ASS'Y			
80	141-4-250T-62573	P.C.B. Ass'y, AC Power Switch	1
S1	4-238T-30100	Switch, Power	1
C901	4-223T-12100	Capacitor 0.01μF 400V	1
	141-4-381T-04200	Bracket Fuse.	2

SCHEMATIC DIAGRAM



WIRING DIAGRAM



Q701~705 ..... 2SC536
Q801~805

Q706, 806 ..... 2SA608
Q707, 708 ..... 2SA999
Q807, 808
Q709, 809 ..... 2SA1016
Q710, 711 ..... 2SC2362
Q810, 811
Q712, 812 ..... 2SC2274
Q713, 813 ..... 2SA984

Q714, 814 ..... 2SC3179
Q715, 815 ..... 2SA1262

Q716, 816 ..... 2SD612

IC701 ..... LA6458

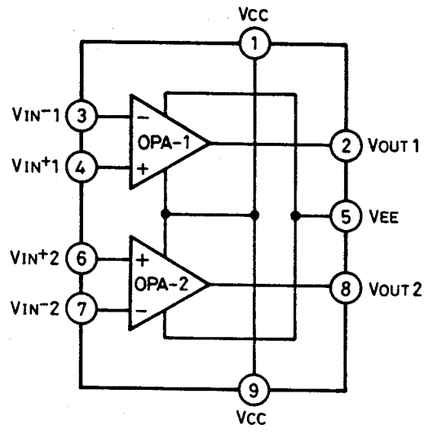
IC702 ..... BA6124

PARTS LIST

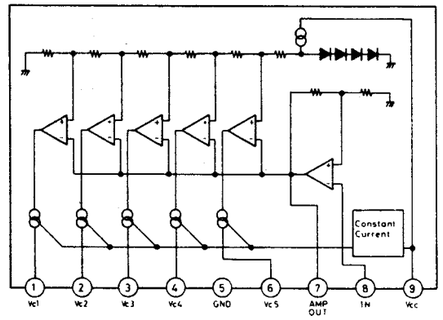
Ref. No.	Part No.	Description	Q'ty
LAMP P. C. B. ASS'Y			
81	141-4-250T-62671 4-612T-17400	P.C.B. Ass'y, Lamp Lamp 12V, 100mA	1 1
SPEAKER TERMINAL P. C. B. ASS'Y			
82 C007,008 009,010	141-4-250T-62773 4-237T-11071	P.C.B. Ass'y, Speaker Terminal Terminal Board Mylar 0.0056μF ±10% 50V	1 1 4
LED METER P. C. B. ASS'Y			
83 IC702 C740 R772	141-4-250T-64571	P.C.B. Ass'y, LED Meter IC LB1403 or IC BA6124 LED SLP251B Green Electrolytic 10μF 16V Carbon 10K ohm T-type ¼W	1 1 5 1 1
BALANCE P. C. B. ASS'Y			
84 VR702 R840 R740	141-4-250T-64671 4-220T-03600	P.C.B. Ass'y, Balance Variable Resistor Carbon 1K ohm T-type ¼W Carbon 1K ohm P-type ¼W	1 1 1 1

IC BLOCK DIAGRAM

LA 6458S (Dual Operation Amplifier)



BA6124 (LED Level Meter)



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